Precision Farming

MANGO UHDP

With Jain Technology™

Jain Irrigation Systems Ltd.

Small Ideas. Big Revolutions.®

MANGO - ULTRA HIGH DENSITY PLANTATION

You have always wished that you had more land and more trees to grow more mangoes. You now have an revolutionary technology which can give up to three times yield. This revolutionary technology called 'Ultra High Density Plantation' (UHDP) is brought to you by your trusted company Jain Irrigation System Ltd., Jalgaon.

UHDP is a great technical innovation

The 'UHDP' revolutionary technology is the result of years of on farm research and technological innovation by the scientists at Jain Irrigation. It is tested and perfected in the field.

- Ultra High density plantation: **674 nos** of mango trees in an acre as against 40 under traditional method.
- **Drip Irrigation & Fertigation** techniques are employed to manage UHD Mango.

- **TRIPLES YOUR YIELD.**
- **HIGHER INCOME.**
- **COMMERCIAL YIELD** in **3** years.
- **CROP REGULATION:** Fruit bearing can be regulated to get produce every year.
- **INTER CROPPING** is possible in initial years.
- **Easy harvest because of low plant height.**
- What is most exciting is that you can convert your existing orchard into an UHDP.

Comparison of income from UHD Mango Orchard & conventional Mango Orchard.		
Particular	**Planting Type**	
	Traditional	**UHDP ***
Expected annual income (Rs./acre)		
Prolific bearing varieties (Price Rs 10/kg)	Up to 50,000	Up to 1,20,000
Shy-bearing varieties (Price Rs 20/kg)	Up to 50,000	Up to 1,20,000
Estimated cultivation expense in Rs. / Acre		
Cost of Orchard establishment	Up to 20000	Up to 80000
Annual cost of maintaining bearing Orchard	Up to 20000	Up to 40000
Estimated Annual Profit in Rs. per Acre		
Prolific bearing varieties	Up to 30000	Up to 80000
Shy-bearing varieties	Up to 30000	Up to 80000
**Estimated total Profit for the first 15 yrs. in Rs. per Acre ** **		
Prolific bearing varieties	Up to 1.25 Lacs	Up to 5.6 Lacs
Shy-bearing varieties	Up to 1.25 Lacs	Up to 5.6 Lacs

*** Taking into account the cost of establishement of the orchard. Possible profit from intercroping in the initial years is not accounted for.*

Mango varieties suitable for UHD cultivation	
State	Varieties
Andhra Pradesh	Alphonso, Alampur Baneshan, Banganapalli, Totapuri , Mallika.
Bihar	Bombai, Himsagar, Langra, Chausa.
Goa	Fernandin, Mankurad.
Gujarat	Alphonso, Kesar.
Karnataka	Alphonso, Bangalora, Neelum, Mallika.
Kerala	Mundappa, Olour, Pairi.
M.P.	Alphonso, Bombai, Langra.
Maharashtra	Alphonso, Kesar, Ratna.
Tamil Nadu	Alphonso, Banganapalli, Imampasand, Totapuri (Bangalora), Neelum.
Uttar Pradesh	Bombay Green, Dashehari, Langra, Lucknow Safeda, Mallika, Chausa.

Yield of UHD Mango & conventional Mango orchard		
Particular	**Traditional**	**UHDP**
Plant Spacing (metre)	10 x 10	3 x 2
Number of Plants /acre	40	674
Time to bear commercial level yield	7-9 yrs.	3-4 yrs
Years to reach full potential	12-15 yrs	4-5 yrs.
Commercial orchard life	Up to 50	25-30 yrs
Expected yield at maturity per Acre		
Prolific bearing varieties	4-5 Ton	10-12 Ton
Shy-bearing varieties	2 to 2.25 Ton	5-6 Ton

2 Year 7 months Old Plantation

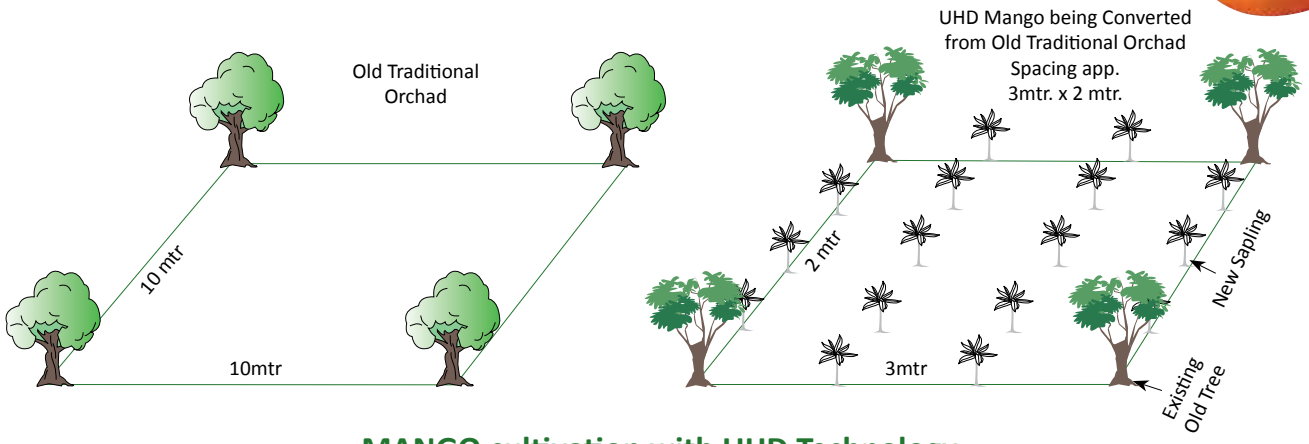
2 Year 10 months Old Plantation

Ready to Harvest (2yr 10 Monts)

UHD Mango Plantation at Jain Irrigation Farm at Udumalpet, Tamil Nadu

How to convert your existing orchards into UHD Mango?

An existing orchard can be converted to an UHD orchard by planting new trees in between the old existing trees. For example, in a 10m x10m orchard, two additional rows between existing rows and three additional plants between two existing plants can be raised to make it an UHD Mango.

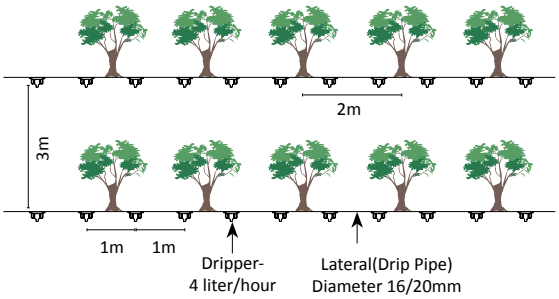


MANGO cultivation with UHD Technology

Drip Irrigation

Irrigation & fertilizer are the most critical inputs for UHDP cultivation. They should be applied through Drip Irrigation System for precise application. Proper irrigation and fertiliser application is a must to make the UHDP technology sucessful.

UHD Mango under Drip



The online drip system is recommended. Each tree is provided with one dripper of 4 LPH during initial two years, and 2 drippers of 4 LPH (placed 45/50 cm away from the trunk) from the 3rd year onward when the water requirement of the plant increases.

Managment of Flowring and Fruit Drop

Foliar spray for inducing Flowering and preventing premature Fruit Drop is required.

Training and Pruning

Pruning and training are very essential and critical operations of UHDP to maintain fruiting shoots and contain the canopy.

Crop Regulation

In case of traditional cultivation, Mango trees generally bear fruits every alternate year. But, under UHDP cultivation, it can be made to bear fruit every year by pruning and treatment with chemicals like Paclobutrazol.

Fertilizer

Fertigation (applying water soluble fertilizer with irrigation) is a much superior method of applying fertilizer. It saves water, labour, and increases the effectiveness of fertilizer, thereby boosting the yield.

Micronutrient application: Micronutrients are to be applied as & when needed.

Fertilizer Requirement

Age	g/tree			FYM kg/tree
	N	P	K	
1st year	35	15	25	5
2nd year	45	25	50	5
3rd year	75	50	75	10
4th year	120	75	100	15
Onwards	120	75	100	15

Age Fertigation Schedule & Quantity

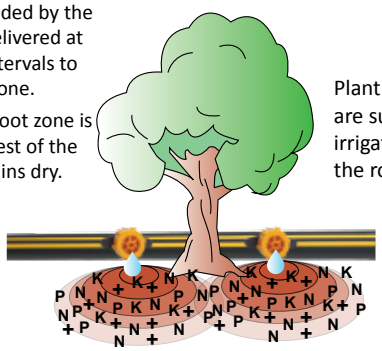
(kg/dose/acre)

Age	Month	Number of Doses	Urea	H_3PO_4	MOP	$MgSO_4$
1yr	July-Sept	12	1.4	0.5	0.8	-
	Jan-May	20	1.7	0.6	0.9	-
2yr	July-Sept	12	2.7	1.2	2.3	0.278
	Jan-May	20	1.6	0.7	1.4	0.167
3yr	15 June-Aug	12	4.5	2.3	3.5	0.555
	Sept	4	1.4	1.2	3.1	-
	Jan-May	20	3.2	1.2	1.5	0.333
4yr on-wards	15 June-Aug	12	7.2	3.5	4.6	0.833
	Sept	4	2.2	1.7	4.2	-
	Jan-March	12	5.1	1.7	3.2	0.833

Principle of Drip Irrigation & Fertigation

Exact volume of water needed by the plant is delivered at regular intervals to the root zone.

Only the root zone is wetted. Rest of the field remains dry.



Plant nutrients are supplied with irrigation water to the root zone.

N= Nitrogen, K=Potassium, P=Phosphorus, + =Micro elements

Benefit of Drip Irrigation

- **Much higher yield** due to precision in irrigation and fertilizer application.
- **Good & Uniform** fruit quality.
- Saving of Water up to **50%**
- Saving of Fertilizer up to **30%**
- Saving of Power.
- Less moisture & so, lesser incidence of weed and disease.
- Saving of labour used in irrigation, fertilizer application and weeding.

Daily Water requirement (WR) for Mango plantation under UHDP (3x2m), Udumalpet.						
Month	Evapo-ration, mm	Water Requirement L/plant/day				
		1st yr	2nd Yr	3rd yr	4th yr	5th yr
Jan	4.60	0.63	2.53	5.69	10.12	10.12
Feb	5.90	0.80	3.21	7.21	12.82	12.82
March	7.29	1.00	4.00	8.99	15.98	15.98
April	6.69	0.89	3.55	7.99	14.21	14.21
May	7.54	0.94	3.76	8.45	15.03	15.03
June	7.45	1.01	4.05	9.12	16.21	16.21
July	7.47	1.03	4.11	9.24	16.43	16.43
Aug	7.84	1.09	4.35	9.78	17.39	17.39
Sept	7.78	0.96	3.84	8.64	15.35	15.35
Oct	4.74	0.55	2.21	4.97	8.83	8.83
Nov	3.84	0.59	2.35	5.28	9.39	9.39
Dec	3.90	0.58	2.33	5.25	9.33	9.33
Avg.	6.02	0.93	3.73	8.39	14.92	14.92

***Based on the location the WR will vary.*

Unique Rejuvenation Technique

Rejuvenation Pruning *Growth of Plant after rejuvenetion*

This is a technique for rejuvenating old trees and thereby making them productive again. The old and non productive branches are cut at their point of origin; only one branch is allowed to support new growth. Fresh productive branches grow again and the plant starts fruit bearing.

What is more, even a new variety can be grafted on the new shoots which emerge after the above rejuvenating pruning.

If you have an old unproductive orchard, you can rejuvenate it to make it productive and at the same time convert it into an UHDP orchard by planting additional saplings. With this you will get a brand new highly productive and profitable orchard !!

NOTE: The Irrigation, Fertigation, and other Agricultural practices given here are part & parcel of the technology and following them is a must for successful adoption of this technology. The UHDP technology should be adopted in full (as a whole package) to get its full benefit. Please contact us for detail literature and guidance for you to adopt this technology.

Jain Drip More Crop Per Drop® | Jain Irrigation Systems Ltd. *Small Ideas. Big Revolutions.®* | More Crop per Drop

Jains Mobile App

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